

**Appendix Q. Final Natural Environment
Study for the Kings Beach
Commercial Core
Improvements Project**

**Final Natural Environment Study
for the Kings Beach Commercial Core
Improvements Project
03-PLA-28
KP 14.79/16.53 (PM 9.19/10.27)
EA 03-198-0C9300**

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FINAL NATURAL ENVIRONMENT STUDY

KINGS BEACH COMMERCIAL CORE IMPROVEMENT PROJECT PLACER COUNTY, CALIFORNIA

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Prepared by:



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SUMMARY

The Kings Beach Commercial Core Improvement Project (Project) is located in the Community of Kings Beach along the north shore of Lake Tahoe in Placer County, California. The Project area boundaries are Chipmunk Street to the east; State Route 267 to the west; along a diagonal running west to east from Rainbow to Minnow Avenue to the north; and along the shoreline of Lake Tahoe, to the south. The Project area contains both residential and commercial properties.

The Project will include:

- Roadway improvements to SR 28 to:
 - Accommodate future transit, pedestrian and bicycle traffic;
 - Improve the aesthetic appearance of the Kings Beach SR 28 corridor; and
 - Improve erosion control conditions by decreasing the amount of sediment flow into creeks, ditches, storm drains and Lake Tahoe;
- Construction of on- and off-street parking sites; and
- Ditch lining and revegetation to further improve erosion control and protect community water resources.

The four alternatives being considered for the Project include:

- **Alternative 1:** No-Build/No-Project. The existing roadway configuration of SR 28 will remain unchanged.
- **Alternative 2:** Three-lane cross section of SR 28 with roundabouts at SR 267, Bear Street, and Coon Street. A bicycle lane approximately 5 ft wide and 18-ft sidewalk/planting area on both sides of SR 28. No on-street parking during the summer months along SR 28.
- **Alternative 3:** Four-lane cross section of SR 28 with traffic signals at SR 267, Bear Street, and Coon Street. Left-turn lanes would be provided on SR 28 at Fox Street. A 5-ft bicycle lane and sidewalk with a 5.4-ft minimum would be provided on both sides of SR 28. On-street parking would be permitted along both sides of SR 28.
- **Alternative 4:** No on-street parking. Identical to Alternative 2, except that on-street parking would be prohibited over the entire year (including winter).

This report presents the results of a series of biological inventories (April, May, and July, 2001; May, June, and September 2002; June 2004; October 2004; September 2005; and March 2006) conducted for the Project. These results characterize vegetation and wildlife habitat; identify the presence or absence of special-status plant and wildlife species and associated potential habitat; and identify and map late seral/old-growth trees (LSOGs), stream environment zones (SEZs), wetlands, and weedy plant species.

The Project area supports both native and non-native vegetation communities. Jeffrey pine and ponderosa pine dominate the overstory vegetation, with inclusions of incense-cedar and white fir. Ninety-one of these trees are LSOGs, an important natural community element. Understory vegetation includes both native and non-native shrubs and herbaceous plants, and is found on the few undeveloped lots, unpaved areas including corridors along roadways, and landscaped areas in and around developed sites.

Predominate wildlife habitats in the Project area include urban-altered Jeffrey pine forest and montane riparian (including SEZs). Griff Creek drainage comprises the principal SEZ in the Project area.

Regional vascular plant species of concern with the potential to occur in the Project area include Washoe tall rockcress (*Arabis rectissima* var. *simulans*), five moonwort species (upswept moonwort [*Botrychium ascendens*], scalloped moonwort [*Botrychium crenulatum*], slender moonwort [*Botrychium lineare*], Mangan moonwort [*Botrychium manganense*], and western goblin [*Botrychium montanum*]), subalpine fireweed (*Epilobium howellii*), and Tahoe yellow cress (*Rorippa subumbellata*). Regional nonvascular plant species of concern with potential habitat in the area include veined water lichen (*Peltigera hydrothyria*), Bolander's candle moss (*Bruchia bolanderi*), Blandow's helodium moss (*Helodium blandowii*), and broad-nerved hump-moss (*Meesia uliginosa*). Field surveys for all of these species conducted in 2001, 2002, 2004, and 2005 resulted in only three Tahoe yellow cress plants being found. These plants were located between Stateline Point and the California side of the Stateline—east of the Project study area.

Regional wildlife species and species groups of concern with potential to occur in the Project area include black bear (*Ursus americanus*), bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaeetus*), waterfowl, migratory birds, brook trout (*Salvelinus fontinalis*), and rainbow trout (*Oncorhynchus mykiss*). Of these, osprey, waterfowl, migratory birds, and brook trout were observed during the field inventories conducted for the Project. Black bear are common in the Lake Tahoe Basin and could occasionally occur in the Project study area while foraging for garbage. Bald eagles could potentially occasionally roost in the area, but this is not highly likely due to the relatively degraded nature of the roosting habitat available. Rainbow trout could potentially occur in Griff Creek but were not detected during the field surveys for this study.

A tree inventory was conducted to identify conifers within the proposed Project area that would potentially be affected by the Project. Data collected included tree species, height, diameter-at-breast-height (dbh), and location. Trees of particular interest were those >30" dbh designated by the Lake Tahoe Regional Planning Agency as LSOGs. These trees are considered a special habitat of concern. For the purpose of this Project, all trees with dbh of 29 inches or greater were identified as LSOG trees. Ninety-one LSOGs were located within the biological study area during the tree inventory.

A protocol-level wetlands delineation and other waters of the United States survey of the Project area was conducted in 2001. Based on the results of this inventory, the U.S. Army Corps of Engineers (Corps) verified approximately 0.06 hectare (0.15 acre) of jurisdictional wetlands, one jurisdictional perennial stream, and a portion of one jurisdictional intermittent drainage that occur within the Project area. Additional inventories were conducted in 2002 and 2004 to

supplement the 2001 survey. These inventories identified additional sites within the Project area that could potentially be considered jurisdictional resources. We recommend that Placer County conduct one additional wetlands inventory to identify and delineate locations of potentially jurisdictional resources within the Project area. The results of this survey should then be verified by the Corps. The 5-year verification period should be adequate to allow the construction of Project elements.

Surveys for weedy plant species including noxious, invasive, and exotic species, identified annual and perennial weedy plant species and two California noxious weed species, diffuse knapweed and scotch broom.

With the completion of the September 2005 tree inventory, Placer County has conducted biological inventories within the proposed Project area in 4 of the last 5 years. The resource information collected during these inventories will provide the baseline data to support preparation of future NEPA and CEQA documents that will analyze the proposed Project.

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List of Abbreviated Terms

Corps	Army Corp of Engineers
amsl	above mean sea-level
Be	Beach
BMP	Best Management Practice
BSA	biological study area
C	Candidate Species
Caltrans	California Department of Transportation
CCIP	Commercial Core Improvement Project
CDFA	California Department of Food and Agriculture
Cal-IPC	California Invasive Plant Council
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
Co	Cello gravelly loamy sand
Corps	U.S. Army Corps of Engineers
dbh	diameter at breast height
DFG	California Department of Fish and Game
dnc	data not collected
E	Endangered Species
ESA	Endangered Species Act
<i>et seq.</i>	literally, "and the following"
Ev	wet variant
FP	Fully Protected
USFWS	U.S. Fish and Wildlife Service
GP	General Permit
Gr	gravelly alluvial sand
HCP	Habitat Conservation Plan
IPES	Individual Parcel Evaluation System
JPN	Jeffrey pine
Lo	loamy alluvial sand
LOD	limits of disturbance
LSOG	late seral/old-growth tree
LTBMU	Lake Tahoe Basin Management Unit
MACTEC	MACTEC Engineering and Consulting, Inc.
MDB&M	Mount Diablo Baseline and Meridian
Mh	marsh
MIS	Management Indicator Species
MMA	Mitigation, Minimization, and Avoidance Measure
MRI	montane riparian
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service

ROW	right-of-way
SC	Species of Concern (USFWS)
SCS	Special Concern Species (DFG)
SEZ	stream environment zone
SI	Special Interest Species
sp.	species singular
spp.	species plural
SR	State Route
S	Sensitive Species
ssp.	sub-species
T	Threatened Species
TRPA	Tahoe Regional Planning Agency
URB	urban
USC	United States Code
USDA	United States Department of Agriculture
WOUS	Other Waters of the United States

1.0 INTRODUCTION

1.1 Project Description

The Kings Beach Commercial Core Improvement Project (Project) is located in the community of Kings Beach along the north shore of Lake Tahoe in Placer County, California. The boundaries for the Project area include Chipmunk Street to the east; SR 267 to the west; along the northern edge running diagonally west to east from Rainbow to Minnow Avenue; and along the shoreline of Lake Tahoe, south of SR 28 (Figure 1). Specifically, the Project area is located in portions of the Northeast $\frac{1}{4}$ of Section 13, Township 16 North, Range 17 East, Mount Diablo Baseline and Meridian (MDB&M), and the West $\frac{1}{2}$ of Section 19, Township 16 North, Range 18 East, MDB&M.

The Project area covers approximately 325.77 hectares (805 acres), contains residential and commercial properties, and receives high vehicular and pedestrian traffic year-round. Project components include SR 28 improvements and on- and off-street Project elements within the Project area. On-street elements include angled and parallel parking and drainage ditches. Off-street elements are parking lots. The four alternatives being considered for SR 28 improvements include the following:

- **Alternative 1:** No-Build/No-Project. The existing roadway configuration of SR 28 will remain unchanged.
- **Alternative 2:** Three-lane cross section of SR 28 with roundabouts at SR 267, Bear Street, and Coon Street. A bicycle lane approximately 1.52-m (5-ft) wide and 5.49-m (18-ft) sidewalk/planting area on both sides of SR 28. No on-street parking during the summer months along SR 28.
- **Alternative 3:** Four-lane cross section of SR 28 with traffic signals at SR 267, Bear Street, and Coon Street. Left-turn lanes would be provided on SR 28 at Fox Street. A 1.52-m (5-ft) bicycle lane and sidewalk with a 1.65-m (5.4-ft) minimum would be provided on both sides of SR 28. On-street parking would be permitted along both sides of SR 28.
- **Alternative 4:** No on-street parking. Identical to Alternative 2, except that on-street parking would be prohibited over the entire year (including winter).

Under all alternatives except Alternative 1, Brook Avenue from Bear Street to Coon Street would be converted to one-way eastbound.

The California Department of Transportation (Caltrans) and Placer County undertook a comprehensive screening process to evaluate alternative configurations in order to select the four alternatives that would be given consideration during the environmental review process. These alternatives were selected on their ability to meet the Project objectives. In addition, other factors were considered, such as cost, environmental impacts, operational efficiency, segmentability of the Project during construction, and maintainability of the alternatives. Based on this process, Caltrans identified the previously “built” alternatives for environmental review. At the end of the process, a final selection of a preferred alternative will be made, and other alternatives considered will be withdrawn. Figure 2 illustrates the Project area boundaries, the SR 28 improvement corridor, and proposed on- and off-street Project element locations.

The combined California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) process for this Project is scheduled to be completed in December 2006. Construction activities would commence upon the completion of final engineering designs for the preferred alternative and the completion of all required permitting and right-of-way acquisition activities.

1.2 Project Purpose and Need

The Kings Beach Project is necessary for the following reasons:

- Improved stormwater runoff will assist Placer County in meeting Tahoe Regional Planning Agency (TRPA) or Lahontan Regional Water Quality Control Board (LRWQB) water quality standards;
- Improved traffic circulation, pedestrian and bicycle mobility will be provided for safer traffic, pedestrian and bicycle utilization of the State Route (SR) 28 corridor;
- Improved scenic and aesthetics will provide a more pleasing community to area residents, tourists and business owners, and assist Placer County in meeting TRPA scenic thresholds for this segment of SR 28; and
- Additional on and off-street parking facilities will provide area business owners, residents and tourists with replacement parking as a result of parking lost along SR 28.



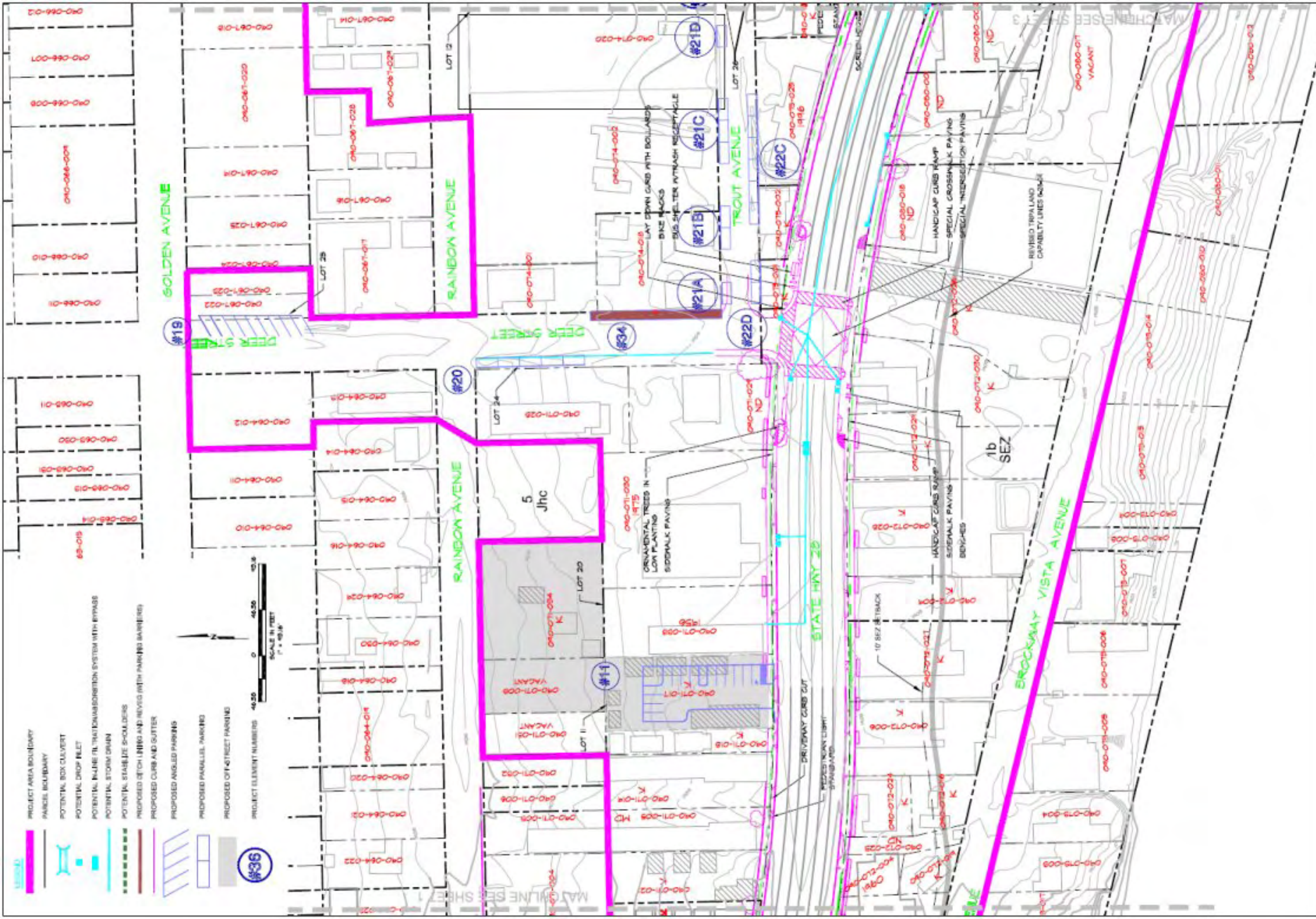


Figure 2 Sheet 2 of 6
Kings Beach Commercial Core Improvement Project
Project Elements

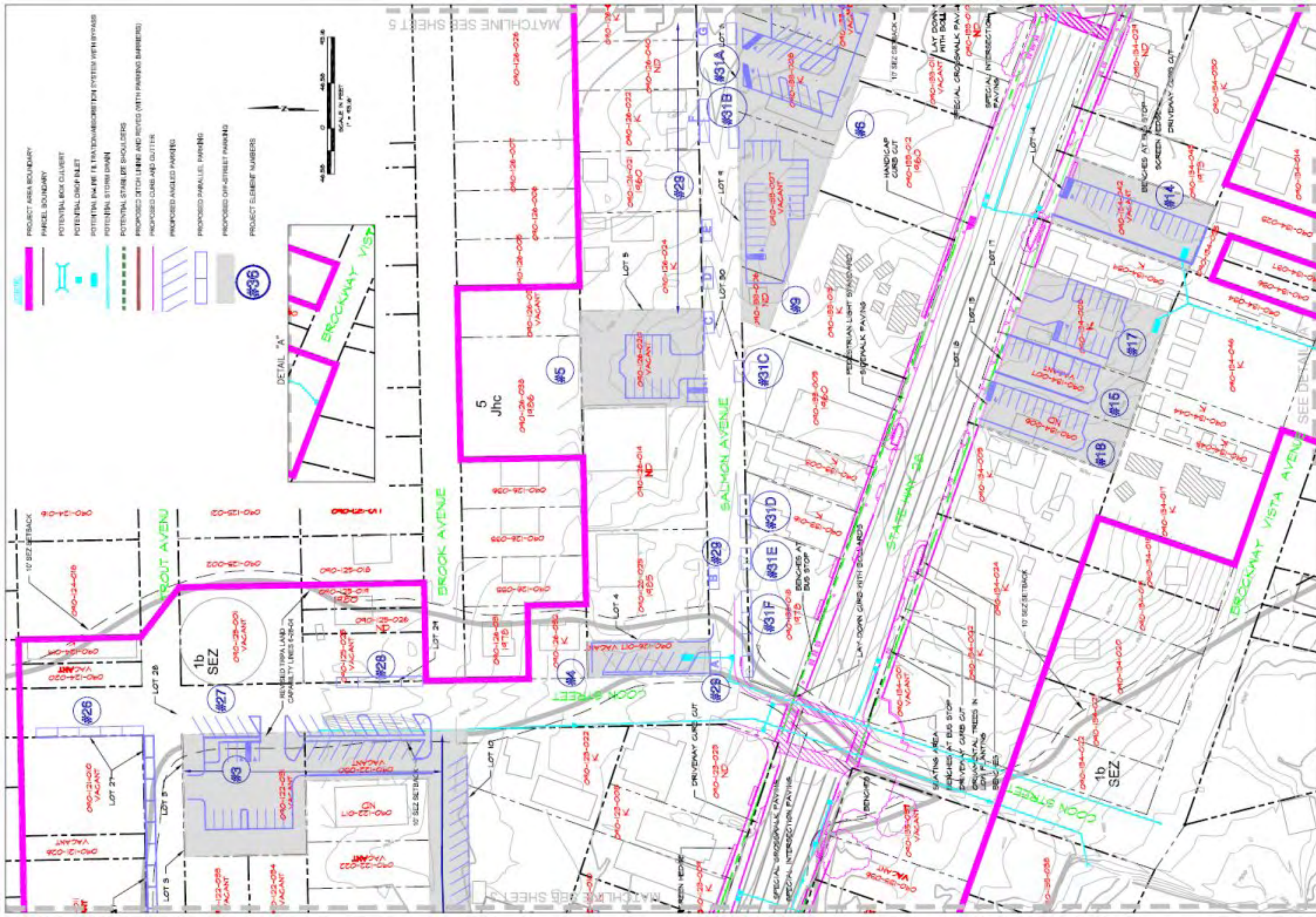


Figure 2 Sheet 4 of 6
Kings Beach Commercial Core Improvement Project
Project Elements

2.0 STUDY METHODS

2.1 Studies Required

Biological studies conducted within the Kings Beach Project area, hereafter referred to as the Kings Beach biological study area (BSA), include inventories of vegetation and wildlife habitats within the BSA, including important natural communities (stream environment zones [SEZs], late seral/old-growth trees [LSOGs], and wetlands), and focused surveys for special-status plant and wildlife species and for weedy plant species.

2.1.1 Pre-Field Investigation

Prior to conducting field surveys, lists of species (common, special-status and weedy) and habitats potentially occurring within the Project vicinity were developed based on information compiled from the U.S. Fish and Wildlife Service (USFWS), USFS, TRPA, California Department of Fish and Game's (DFG's) California Natural Diversity Database (CNDDDB Rarefind 2006 records for Tahoe City and King's Beach 7.5-minute USGS quads), the California Native Plant Society ("CNPS" Electronic Inventory 2006) and from available scientific literature. Documents and publications that provided the principal information on vegetation included *Vegetation of the Lake Tahoe Region* (TRPA 1971), *A Manual of California Vegetation* (Sawyer and Keller-Wolf 1995), *Lake Tahoe Basin Sierra Nevada Natural History* (Storer and Usinger 1963), *Tahoe Basin Forest Cover Types of the United States and Canada* (Eyre 1980), *Lake Tahoe Basin Plants of the Tahoe Basin: Flowering Plants, Trees, and Ferns* (Graf 1999), and *Lake Tahoe Watershed: Volume I* (USDA 2000).

2.1.2 Vegetation and Special-Status Plant Surveys

Field vegetation surveys included initial spatial characterization of the vegetation communities, including LSOG areas and stream environment zones (SEZs), followed by systematic pedestrian surveys for special-status plants and weedy species. Special-status plant surveys were timed to be coincident with known blooming periods for these species. All occurrences of special-status plants and weedy species, and the spatial extent of existing vegetation communities and LSOG and SEZ areas, were recorded in the field with a global position system (GPS) and on aerial photographs, and later transferred to Project area plans.

All vegetation surveys for the Project were conducted between April 2001 and September 2005. The specific dates and focus of each survey are summarized in Table 1.

Table 1. Vegetation Surveys for the Kings Beach Commercial Core Improvement Project

Date	Survey Focus	Surveyors
April 24 and 30, 2001	General vegetation, special-status communities, special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, and Washoe tall rockcress), wetlands, wildlife and wildlife habitat; and weedy plants	MACTEC Engineering and Consulting (MACTEC) staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
May 1 and 30, 2001	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, and Washoe tall rockcress) wetlands, wildlife, and weedy plants	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
July 20, 2001	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, Washoe tall rockcress, and Tahoe yellow cress), wetlands, wildlife, and weedy plants	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
May 28 and 29, 2002	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, and Washoe tall rockcress), wetlands, wildlife, and weedy plants	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
June 4, 5 and 5, 2002	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, Washoe tall rockcress), wetlands, wildlife, and weedy plants.	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
September 3, 4, 5, and 6, 2002	Special-status plants (including upswept moonwort, scalloped moonwort, slender moonwort, Mingan moonwort, western goblin, subalpine fireweed, Washoe tall rockcress), wetlands, wildlife, and weedy plants.	MACTEC staff: Nancy Bish, David Arsenault, Jackee Picciani, and Amy Linnerooth
June 2004	Wildlife	TRPA staff
October 5, 2004	Special-status plants (including Bolander's candle moss, Blandow's helodium moss, broad-nerved hump moss and veined water lichen); wetlands, and wildlife.	MACTEC staff: Nancy Bish, David Arsenault, , and Amy Linnerooth
September 1, 2, 8, and 22, 2005	Special-status plants (Tahoe yellow cress [BMP survey]) and trees.	MACTEC staff: Jackee Picciani and Amy Linnerooth
March 23, 2006	Wetlands and waters of the United States	MACTEC staff: Jackee Picciani
May 24 and 25, 2006	Special-status bats and other wildlife species, including nesting raptors and nesting swallows	Jones & Stokes staff: Ed West

Vegetation surveys focused on identification and characterization of existing land cover types and special-status plant communities in the BSA area. These surveys included:

- Visual characterization of existing vegetation in the BSA by species composition and dominance determinations;
- Identification and spatial characterization of special-status plant communities, including LSOG areas and SEZs;
- Identification, measurement, and mapping of all trees in the BSA;
- Delineation and/or assessment of wetlands and other waters of the United States;
- Pedestrian surveys for special-status plants and their habitats; and
- Identification and mapping of weedy plant species.

2.1.2.1 Wetlands and Waters of the United States

Wetlands and waters of the United States in the BSA were delineated in accordance with Section 404 of the Clean Water Act, the Corps *1987 Wetlands Delineation Manual* (Environmental Laboratory 1987), and the Corps Sacramento District “Minimum Standards for Acceptance of Preliminary Wetland Delineations” (USDA 1994) for surveys conducted in 2001, 2002, 2004, and 2006. General area photographs, routine wetland determination forms, and plot photographs were used to document the wetland resources in the BSA.

2.1.3 Tree Inventory

All coniferous trees occurring within individual on- and off-street Project element sites were inventoried in September 2005. Data collected included species identification, height (measured with a clinometer), diameter at-breast-height (dbh) (measured with a dbh tape) and individual locations. All trees were mapped, and their locations were used in planning the location and configuration of parking sites and lot within the Project area. The tree inventory identified LSOGs on developed and undeveloped lots throughout the BSA.

2.1.4 Weedy Plants

Weedy plant species were surveyed in the BSA during the 2001, 2002, and 2004 field inventories (Table 1). All State of California noxious weeds and Priority and Invasive weeds of the Tahoe Basin observed were identified and mapped. Disturbed soils and drainage ditches immediately adjacent to roadways were targeted as the most likely habitats for these species. Any unknown plant was collected and identified to the species level when possible.

2.1.4.1 Wildlife Surveys

Wildlife surveys were conducted during the 2001 and 2002 breeding seasons (May, June, and July). Two days each month were spent conducting meandering pedestrian transects in May 2001 and 2002. Additional transects were conducted over 3 days in June 2002 and 2004, and

1 day in July 2001. Meandering pedestrian transects also were conducted for wildlife species during May, September, and October (bird migration months). Two days were spent conducting transects in April 2001, 5 days in September 2002, and 1 day in October 2004.

Wildlife surveys conducted in the Griff Creek drainage during 2001, 2002, and 2004 also included a visual search for aquatic species (fish, reptiles, and amphibians).

Field surveys to identify special-status bats and other wildlife species, including nesting raptors and nesting swallows, located within the BSA were conducted by Jones & Stokes biology staff during the 2006 field inventories (Table 1). The surveys were conducted May 24 and 25, 2006. Visual surveys were conducted throughout the BSA for bat sign in buildings during the day and for bat activity after dusk. Also a Peterson D 240x ultrasonic bat detector was used to detect bat presence in buildings and while flying around the area. Bats (possibly *Myotis yumanensis*) were observed at a pond offsite, but no bats were observed onsite during the surveys. However, suitable bat roosting habitat was found within the BSA, including buildings and large trees. Cliff swallows (*Petrochelidon pyrrhonota*) were observed flying through the BSA and gathering mud along the Griff Creek drainage near the lake shoreline, but no nesting colonies were observed. Canada geese (*Branta canadensis*), Steller's jay, (*Cyanocitta stelleri*), California gull (*Larus californicus*), Brewer's blackbirds (*Euphagus cyanocephalus*), Cliff swallows, American robin (*Turdus migratorius*) and European starlings (*Sturnus vulgaris*) were the migratory bird species observed during the survey.

2.2 Personnel and Survey Dates

Biological resource surveys within the BSA were conducted by MACTEC wildlife biologists Nancy Bish and David Arsenault, botanist Jackee Picciani, and environmental scientist Amy Linnerooth. Follow-up surveys in 2006 were conducted by Jones & Stokes biologist Dr. Ed West. The survey descriptions, dates, and personnel involved in each survey are presented in Table 1.

2.3 Agency Coordination and Professional Contacts

Prior to the initiation of field surveys, MACTEC contacted local resource agencies, organizations, and local experts for the most current information on the occurrences and status of biological resources in the BSA. People contacted included Shane Romsos, Sloan Gordon, J. Jones and M. Vollmer (Tahoe Regional Planning Agency), Gail Durham, Molly Hurt, Shana Gross and S. Spaulding (USFS), Richard Gebhart (Corps), S. Kehr (DFG), E. Peterson (Nevada Natural Heritage Program), A. Stanton (BMP Ecosciences), and Charles Zier (Geoarch Sciences).

DFG's CNDDDB was searched for information on known special-status plant wildlife species and natural community occurrences in the Project area. A request also was sent to USFWS for a list of federally listed species that could potentially occur in the BSA.

2.4 Limitations That May Influence Results

2.4.1 Vegetation

2.4.1.1 Special-Status Plants

The list of special-status plant species in the region is constantly being revised. Because the list prior to 2004 did not include nonvascular plants, surveys conducted in the BSA prior to that time did not include veined water lichen and moss species. The areas surveyed within the BSA also have changed over time. While the 2001 and 2002 survey areas included the Griff Creek SEZ that has mesic riparian habitat presumably suitable for the moonworts, mosses, and veined water lichen and subalpine fireweed (a vascular species) that were added to the special-status list later, these species were not surveyed for at that time. Additionally the 2004 and 2005 surveys focused only on the riparian habitats in roadside drainages within the BSA. Because of these survey restrictions, we cannot definitively state that the aforementioned special-status plants are not present in the Griff Creek SEZ. There is also a chance that the surveyor did not observe and identify all regional species of concern within the BSA.

Wetland delineation and other waters of the United States survey: The 2001 wetland delineation was conducted at maximum hydrology in April and May, but 2000–2001 was a below-normal precipitation year. Therefore, interpretations of wetland hydrology were conservative. Also, some of the plant species were not identifiable to the species. However, this delineation was subsequently verified by the Corps. The 2002 investigation was conducted in September, well after maximum hydrology for the year. Therefore, hydrology was inferred based on soil characteristics and vegetation for the wetland plots, and channel characteristics determined the presence of other waters of the U.S. as surface water was not present. Also, the general assessment conducted in 2004 was qualitative and does not contain quantitative information. Due to the presence of 0.2 to 4.0 feet of snow, the March 2006 investigation was unable to determine the presence and extent of additional potential jurisdictional wetland resources within the project area.

2.4.1.2 Weedy Plant Species

The 2001 and 2002 surveys were the most comprehensive BSA weed surveys in terms of area covered and times visited throughout the growing season. Subsequent 2004 and 2005 surveys, were restricted to the most disturbed habitats within the BSA—roadside shoulders and drainages, and formerly developed and disturbed parcels. Therefore, these efforts served to verify prior occurrences of weedy plant species as well as locate new ones. However, there is a chance that the surveyor did not observe and identify all weedy plant species within the BSA.

2.4.2 Wildlife

The wildlife species observed were only those that were visibly active during the time of day and season that the surveys were conducted and in the specific habitats surveyed. Other species undoubtedly occur within the BSA that were not recorded due to the limitations of the survey design.